



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,259	07/23/2001	Gary C. Gitto	071668.1001-108	4377

30407 7590 08/08/2003
BOWDITCH & DEWEY, LLP
161 WORCESTER ROAD
P.O. BOX 9320
FRAMINGHAM, MA 01701-9320

EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
1745	10

DATE MAILED: 08/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/911,259	GITTO, GARY C.
	Examiner	Art Unit
	Mark Ruthkosky	1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-41 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-41 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The rejection of claims 6, 7, 9, 13, and 15 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention have been overcome by the applicant's amendment.

Specification

The amendment filed 5/15/2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The limitation "greater than about 250 psi" is not supported by the specification. The specification teaches various points for a flexural modulus value in specific examples; however, no range is provided for greater than about 250 psi for the general composition. Further, there is no support for the range of 250,000 – 275,000 psi.

With regard to claims 24, 30 and 37, there is no support provided for ethylene diamine phosphate salt in the specification. Upon reviewing the applicant's statement that the amendment is supported and the corresponding sections of the specification described, no discussion of ethylene diamine phosphate salt was found.

With regard to claims 25, 31 and 38, there is no support for a limitation of a V-O rating at a thickness of about 1/32 of an inch. With regard to claims 27, 33 and 40, there is no support for

Art Unit: 1745

a Gardner impact value of greater than about 1 ft./inch at a thickness of about 1/8 inch. With regard to claims 28, 34 and 41, there is no support for a specific gravity range of 0.95-1.25.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nalepa (US 5,204,393) in view of EP 0 618 255 A1.

The instant claims comprise a battery casing formed of a flame-retardant thermoplastic composition comprising a homopolymer, a copolymer, and a phosphate salt. The casing has a burn rating of V-O under the UL-94 standard and a flexural modulus greater than 250,000 psi. Other materials, including fillers, may be added.

Nalepa et al. (5,204,393) teaches a flame-retardant polyolefin composition useful for battery cases (column 5, lines 10-11), which comprises a combination of ammonium polyphosphate, melamine cyanurate and polymers. The polymer composition includes homopolymers of polyolefins, mixtures of polymers and copolymers, terpolymers, etc. of one or more polyolefins (claims 1-2, and column 2, lines 57-60). Specific examples include polyethylene, polypropylene and polybutylene, including homopolymers and copolymers thereof and various types of such polymers, a copolymer of two or more polymers such as, for example,

Art Unit: 1745

i) a copolymer made with ethyl vinyl acetate and ethylene and ii) a crystalline copolymer made with ethylene and propylene and iii) a blend of two or more polymers such as polypropylene and polyethylene in any ratio (column 3, lines 40-50). Nalepa et al. (5,204,393) further teaches polytetrafluoroethylene to be added to the mixture, (see col. 5, lines 15-55 and the examples.) The mixture is blended in a temperature range of 170-210 °C (column 7, lines 32-33). The amount of ammonium polyphosphate falls within the range of 25-27 percent (see claim 3, column 10, lines 60-61 and claim 10, column 12, lines 8-9).

Nalepa et al. (5,204,393) teaches a polymer composition including mixtures of polymer and copolymer materials, but does not provide a specific example of a polymer and copolymer. Nalepa is also silent to the flexural modulus of the materials. EP 0 618 255 A1, however, teaches a flame-retardant composition useful for battery cases (page 5, lines 34-35) where a propylene homopolymer and a copolymer of propylene and a select second olefin are combined to form a polymer composition having an improved flame resistance (see claim 1, page 5, lines 44-55). The polymer composition may be in the range of 30-60 percent homopolymer and a copolymer of 5-70 percent (see claim 1, lines 45-50). The flexural modulus of the materials are about 250,000, and obtained UL ratings of V-O (see the tables for specific examples.) These values are inherent properties of the materials. To one skilled in the art at the time the invention was made, it would be obvious to use the composition of homopolymer and copolymer as described in EP 0 618 255 A1 as the polymer mixture for the flame retardant material described in Nalepa et al. (5,204,393). Nalepa et al. (5,204,393) teaches the mixture of polymers and copolymers and EP 0 618 255 A1 provides specific examples of these materials. In addition, it is *prima facie* obvious to combine two compositions, each of which is taught by the prior art to be

useful for the same purpose, in order to form a third composition which is to be used for the very same purpose, *In re Kerkhoven*, 205 USPQ 1069, 1072.

With regard to claims 14-16, which show the thermoplastic composition to further include a filler selected from a group consisting of aluminum trihydrate, hydrated magnesium, hydrated calcium silicate, and calcium carbonate in a defined concentration range, Nalepa et al. (5,204,393) teaches a flame-retardant polyolefin which comprises a combination of ammonium polyphosphate, melamine cyanurate and a polymer. Talc, (hydrated magnesium) is used as a filler in both references, (see Nalepa, column 7, line 26 and EP '222, various locations.) The mixture further includes sodium silicate filler in an aqueous medium (column 4, lines 34-35). To one skilled in the art at the time the invention was made, it would be obvious to use talc as a filler or sodium silicate as a filler in the place of calcium silicate as the countercation is a spectator in the silicate salt. The spectator cation is not involved with the chemical process associated with the silicate. Thus, substituting a countercation is well within the proficiency of one skilled in the art. The concentrations of filler in examples 1 and 2 are within the range of 0-250 parts per 100 parts of the homopolymer and copolymer (as addressed in claim 15, and the examples in column 7, line 24 and column 8, line 7.) Melamine is also included in the preparation (see column 7, line 28). To one skilled in the art at the time the invention was made, it would be obvious to use the fillers taught in Nalepa et al. (5,204,393) in battery casings. The properties of the fillers are known to those skilled in the art.

With regard to claims 17-19, which incorporate the battery casing described in the instant invention in a photovoltaic battery, a motive battery, and a backup battery, Nalepa et al. (5,204,393) teaches a flame-retardant polyolefin which comprises a combination of ammonium

polyphosphate, melamine cyanurate and a polymer which may be used as a battery casing. It would be obvious to one skilled in the art at the time the invention was made to incorporate this type of battery case into a photovoltaic battery, a motive battery, or a backup battery. The battery casing does not change the basic, inherent properties of the battery. It may improve casing characteristics such as durability, strength or temperature resistance of the battery, however it does not alter the basic elements incorporated in the battery itself. It would be obvious to one skilled in the art to substitute a battery casing to improve the flame-retardant properties, as taught by Nalepa, in any type of battery.

With regard to claims 20-22, which refer to a method for forming a flame-retardant composition for a battery casing wherein the composition is blended with two rotors.

Nalepa et al. (5,204,393) teaches a flame-retardant polyolefin as noted. The reference does not teach mixing at 340-410 C or a melt flow rate in the range of 9.6 to 16g/10 min. The method for preparing the flame-retardant polyolefin describes a mixing process using a Banbury type mixer (column 5, column 7, lines 30-33). Various mixing techniques and parameters are noted in EP 618,255 (see the examples and tables on pages 3-5.) It would be obvious to one of ordinary skill in the art at the time the invention was made to mix the materials in a manner known in the art to manufacture the desired product. Mixing the components in a Banbury type mixer would be one possible method of preparing the product. Using any of the conventional methods shown in the references to obtain the desired mixing results would be obvious to one skilled in the art. One of ordinary skill would have the knowledge to regulate the temperatures and melt flow rate in order to achieve homogeneous mixing of the materials to form the casing.

Claims 23-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nalepa (US 5,204,393) in view of EP 0 618 255 A1.

Nalepa et al. (5,204,393) teaches a flame-retardant polyolefin composition useful for battery cases (column 5, lines 10-11), which comprises a combination of ammonium polyphosphate, melamine cyanurate and polymers. The polymer composition includes homopolymers of polyolefins, mixtures of polymers and copolymers, terpolymers, etc. of one or more polyolefins (claims 1-2, and column 2, lines 57-60). Specific examples include polyethylene, polypropylene and polybutylene, including homopolymers and copolymers thereof and various types of such polymers, a copolymer of two or more polymers such as, for example, i) a copolymer made with ethyl vinyl acetate and ethylene and ii) a crystalline copolymer made with ethylene and propylene and iii) a blend of two or more polymers such as polypropylene and polyethylene in any ratio (column 3, lines 40-50). Nalepa et al. (5,204,393) further teaches polytetrafluoroethylene to be added to the mixture, (see col. 5, lines 15-55 and the examples.) The mixture is blended in a temperature range of 170-210 °C (column 7, lines 32-33). The amount of ammonium polyphosphate falls with in the range of 25-27 percent (see claim 3, column 10, lines 60-61 and claim 10, column 12, lines 8-9).

Nalepa et al. (5,204,393) teaches a polymer composition including mixtures of polymer and copolymer materials, but does not provide a specific example of a polymer and copolymer. Nalepa is also silent to the flexural modulus of the materials. EP 0 618 255 A1, however, teaches a flame-retardant composition useful for battery cases (page 5, lines 34-35) where a propylene homopolymer and a copolymer of propylene and a select second olefin are combine to form a polymer composition having an improved flame resistance (see claim 1, page 5, lines 44-

55). The polymer composition may be in the range of 30-60 percent homopolymer and a copolymer of 5-70 percent (see claim 1, lines 45-50). The flexural modulus of the materials are about 250,000, and obtained UL ratings of V-O (see the tables for specific examples.) With regard to claims 25 and, the reference shows a V-O burn rating. These values are inherent properties of the materials. To one skilled in the art at the time the invention was made, it would be obvious to use the composition of homopolymer and copolymer as described in EP 0 618 255 A1 as the polymer mixture for the flame retardant material described in Nalepa et al. (5,204,393). Nalepa et al. (5,204,393) teaches the mixture of polymers and copolymers and EP 0 618 255 A1 provides specific examples of these materials. In addition, it is *prima facie* obvious to combine two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose, *In re Kerkhoven*, 205 USPQ 1069, 1072.

With regard to claim 24, 30 and 37, the reference does not teach the phosphate salt to be an ethylene diamine phosphate salt. It would be obvious to one of ordinary skill in the art at the time the invention was made to use a phosphate salt as an additive for preventing the burning of a polymer composition as taught by the applied references. One of ordinary skill in the art would understand that the cation of the salt would have a limited affect on the property of the salt and one of ordinary skill in the art would recognize phosphate salt equivalents for the same purpose.

With regard to claims 27, 33 and 40, the Gardner impact value is inherent to the materials of the casing. As the materials of the art are the same, one of ordinary skill in the art would have the knowledge to adjust the amounts of materials in order to prepare a casing with desirable characteristics such as material strength and low flammability.

Art Unit: 1745

With regard to claims 28, 34 and 41, the specific gravity will be a value that is inherent to the materials of the casing. As the materials of the art are the same, one of ordinary skill in the art would have the knowledge to adjust the amounts of materials in order to prepare a casing with desirable characteristics such as material strength and low flammability.

The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner Correspondence

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-2383.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Mark Ruthkosky
Patent Examiner
Art Unit 1745

Mark Ruthkosky
8/4/03